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EIoT Assignment 2

~~Aim : To implement affine cipher technique to convert plain text to cipher text and vice - versa.~~

~~Theory : Affine cipher is a type of monoalphabetic~~

Q. 1 Explain working principle of LM35 temperature sensor.

Ans LM35 is a temperature sensor that outputs an analog signal which is proportional to instantaneous temperature. The output voltage can easily be interpreted to obtain a temperature reading in Celsius. The advantage of LM35 is it does not require any external calibration. The coating protects it from self - heating. The analog voltage produced by LM35 is given as input to Bolt AO pin. The Bolt then converts the analog value into a 10 digit value that varies from 0 - 1023. This digital data is sent to cloud via Bolt device.

? interfacing diag

Q. 2 Write a short note on SPDT and DPDT.

Ans ① SPDT

- SPDT stands for single pole double throw. It is beneficial in modern applications because of its internal configuration.
- Two electromagnetic relay coils, one common terminal (CM), one normally closed terminal (N/C) and one normally open terminal (N/O)
- From these features, we find that the SPDT relay coil has 2 different configurations making it unique from other control relays.
- When there is no coil current, the magnetic current is released, the common terminal and normally closed terminal get assigned.

① DPDT
- DPDT stands for double pole double throw relay. They are often used to interface any electronic circuit, which works at a low voltage to an electrical circuit which works at a high voltage.
- DPDT relay can be used to power either one device/appliance or another.
- While SPDT relay can only switch the output circuit between on and off states; a DPDT relay can also be used to change the polarity at terminals of a device connected at output.

Q. Write a short note on IoT operating system.

Ans IoT refers to a vast network of connected devices and sensors that share, process and analyze data to enable smooth communication and automation. An IoT OS allows us to communicate with cloud services across a global network with tight constraints of memory bandwidth, data volume and processing power. IoT OS enables devices and apps to communicate with each other and other systems, including cloud platforms and services. IoT OS has been undergoing evolution from a long time. It has passed through many different stages, adapting to changes in unique requirements of IoT apps.

Q. Write a short note on SPIN protocol.

Ans The SPIN protocol introduces 2 key innovations : Negotiation and Resource Adaption. To solve the issue of impulsion and resource overlap, the SPIN nodes negotiate

before sending the data. The SPIN family of protocols rests upon two basic ideas, i.e., to operate efficiently and to conserve energy. Nodes in a network must monitor and adapt to changes in their own energy resources to extend the operating lifetime of the system. SPIN protocol are of 3 types: SPIN - PP, SPIN-EC, SPIN - BC. Spin - PP is optimised for point - to - point link where A and B can talk to each other without interfering with each other. SPIN - EC only starts a stage of the protocol that it can finish. SPIN - BC nodes send their messages to broadcast address.

. Write a short note on Data Stream Management System.

as DSMS is nothing but a application just like DBMS. It involves processing and management of continuously flowing data stream rather than static data like excel or pdf or other files. It generally uses deal data stream from with various sources which included sensors data, social media field, financial report, etc. Just like DBMS, DSMS also provides the wide range of operations like storage, processing, analyzing, integration also helps to generate the visualization and report only use for data streams.

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